Please type a plus sign (+) inside this box → +

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/850,301
Filing Date	May 7, 2001
Inventor(s)	Mark A. Terrible
Group Art Unit	2141
Examiner Name	Le H. Luu
Attorney Docket Number	129250-002069/US

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Request For Reconsideration
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
- ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☐ Letter to the Official Draftsperson and _____ Sheets of Formal Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Change of Correspondence Address and Revocation/POA
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance Communication to Group
- ☐ LETTER SUBMITTING APPEAL BRIEF AND APPEAL BRIEF (w/clean version of pending claims)
- ☒ Appeal Communication to Group *(Notice of Appeal, **Appeal Brief**,(Corrected) Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) *(please identify below):*

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	CAPITOL PATENT & TRADEMARK LAW FIRM, PLLC	Attorney Name: John E. Curtin	Reg. No.: 37,602
Signature			
Date	December 15, 2006		

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IAP44
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IN THE U.S. PATENT AND TRADEMARK OFFICE

Application No.: 09/850,301

Filing Date: May 7, 2001

Applicant: Mark A. Terrible

Group Art Unit: 2141

Confirmation No: 2198

Examiner: Le Hein Luu

Title: TECHNIQUE FOR ANALYZING INTERNET TRAFFIC TO SELECT HOT SPOTS

Attorney Docket: 129250-002069/US

APPLICANT'S BRIEF ON APPEAL (Corrected)

MAIL STOP APPEAL BRIEF - PATENTS
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

December 15, 2006

OIPE
DEC 15 2006
IAP44
PATENT & TRADEMARK OFFICE

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APPELLANT'S BRIEF ON APPEAL

I. REAL PARTY IN INTEREST:

The real party in interest in this appeal is Lucent Technologies Inc. Assignment of the application was submitted to the U.S. Patent and Trademark Office and recorded at Reel 011807, Frame 0281.

II. RELATED APPEALS AND INTERFERENCES:

There are no known appeals or interferences that will affect, be directly affected by, or have a bearing on the Board's decision in this Appeal.

III. STATUS OF CLAIMS:

Claims 1-20, 22-31 and 33-42 are pending in the application. Claims 1, 6, 16 and 27 are written in independent form.

Claims 1-20, 22-31 and 33-36 were objected to based on an informality. Claims 1-20, 22-31 and 33-42 have been finally rejected under 35 U.S.C. §103(a). Claims 1-20, 22-31 and 33-42 are being appealed.

IV. STATUS OF AMENDMENTS:

A Request For Reconsideration ("Request") was filed on May 30, 2006. In an Advisory Action dated June 21, 2006 ("Advisory") the Examiner stated that the Request was considered; however, the Request did not place the application in condition for allowance.

V. SUMMARY OF CLAIMED SUBJECT MATTER:

(i) Overview of the Subject Matter of the Independent Claims

In general, the present invention is directed at methods and devices for caching Internet site names. Each method and device makes use of a table that contains both "replaceable" (e.g., least frequently used Internet site names) and "irreplaceable" (e.g., most frequently used Internet site names) entries.

(a) Claim 1

More specifically, independent claim 1 is directed to a caching method that includes the steps of **(see for example the Specification p.2, ll. 8-12; p.3, ll. 7-9; p.5, ll. 13-25; and Figs. 1 and 2)**:

(a) receiving an Internet site name;

(b) storing the Internet site name in an entry of a table having n entries if the Internet site name is not in the table;

(c) counting the number of times the Internet site name has been received, and if the Internet site name is new and the table is full, selecting an entry from a set of replaceable entries in the table, where the table includes both replaceable and irreplaceable entries;

(d) replacing the selected entry with the new entry; and

(e) caching a resource corresponding to at least one of a most frequently used Internet sites r where $r \leq n$.

(b) Claim 6

Similarly, independent claim 6 is directed at an apparatus for caching resources of r most frequently used Internet site names comprising **(see for example the same Specification cites as claim 1 plus p.6, ll. 22-23; p.6, l. 29 to p. 7, l. 4; and Figs. 1,2 and 5)**:

(a) a memory for storing a table having n entries where n ≥ r, where r is the number of most frequently used Internet sites and each entry comprises a name field; and

(b) a processor for performing the steps set forth in claim 1, parts (a) through (d).

(c) Claim 16

Independent claim 16 is also directed at an apparatus for caching resources of r most frequently used Internet site names, the apparatus comprising **(see for example the Specification p. 5, l. 26 to p.6, l. 19; p.8, ll. 19 to 29; Figs. 1 and 3-7; as well as the cites from claims 1 and 6)**:

(a) a receiver for receiving an Internet site name;

(b) a processor for converting the Internet site name into a hash number and storing the number into an entry in a table; and

(c) a memory for storing the table having n entries where n ≥ r, where r is the number of most frequently used Internet site names, each entry in the table comprising a number field for the number, a name field for the Internet

site name and a count field for counting the number of times the Internet site name is received, wherein

(d) the processor further selects an entry from a set of replaceable entries in the table if the table is full and the number is not in the table and replaces the selected entry with the hash number entry according to the value of the count field of each entry the table including both replaceable and irreplaceable entries.

(d) Claim 27

Finally, independent claim 27 is directed at a computer readable medium having computer program logic recorded thereon for building a table to select r most frequently used Internet site names, the computer program logic comprising program code segments that control functions similar to those set forth in claim 16, parts (a) through (d) **(see the Specification excerpts cited with respect to claim 1, 6 and 16 above as well as Figs. 1, and 3-7)**.

In order to make the overview set forth above concise, and thus useful to the members of the Board, the Appellant notes that the disclosure that has been included, or referred to, above represents only a portion of the total disclosure set forth in the Specification that supports the independent claims.

(ii) The Remainder of the Specification Also Supports the Claims

The Appellant notes that there may be additional disclosure in the Specification that also supports the independent and dependent claims.

Further, by presenting the disclosure above the Appellant does not represent that this is the only evidence that supports the independent claims nor does Appellant necessarily represent that this disclosure can be used to fully interpret the claims of the present invention. Instead, this disclosure is an overview of the claimed subject matter.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL:

Appellant seeks the Board's review and reversal of the Examiner's: (1) objections to claims 1-20, 22-31 and 33-36; (2) rejection of claims 1-15 and 37-40 under 35 U.S.C. §103(a) based on Peercy et al., U.S. Patent No. 5,960,429 ("Peercy") in view of Doyle, U.S. Patent Publication No. 2002/0099807 ("Doyle") and in further view of U.S.Patent No. 6,826,652 ("Chauvel"); and (3) rejection of claims 16-20, 22-31, 33-36 and 41-42 under 35 U.S.C. §103(a) based on Peercy, in view of Doyle and in further view of Swildens, U.S. Patent Publication No. 2001/0034772 ("Swildens").

VII. ARGUMENTS:

A.) The Informality Objections

In the Final Office Action claims 1-20, 22-31 and 33-36 were objected to, the Examiner requesting that the Appellant replace the words "Internet site" with the words ---Internet site name---. In the Request submitted on May 30, 2006 the Appellant pointed out that it appeared that the claims already

included these changes. Nonetheless, the Appellant asked the Examiner to point out those claims that still needed to be changed. As of this date the Appellant has not received a communication from the Examiner. Thus, the Appellant presumes these objections have been withdrawn.

B.) The Section 103 Rejections

Claims 1-15 and 37-40 were rejected under 35 U.S.C. §103(a) as being unpatentable over Peercy in view of Doyle and in further view of Chauvel. Claims 16-20, 22-31, 33-36 and 41-42 were rejected under 35 U.S.C. §103(a) as being unpatentable over Peercy, in view of Doyle and in further view of Swildens. Appellant respectfully disagrees for at least the following reasons.

(i) Claims 1-15 and 37-40

As the Appellant pointed out in his Request, the Examiner does not appear to have addressed the shortcomings of Chauvel raised by the Appellant in his previous responses. In the Advisory, the Examiner appears to be taking the position that he does not have to address the shortcomings of Chauvel because, in the Examiner's opinion, the Appellant is arguing features that are not present in the claims. The Appellant notes that the Examiner does not point out what claims or what features the Examiner is referring to in the Advisory, so, the Appellant is left to guess that the Examiner is referring to claims 1-15 and 37-40 as well as to Chauvel.

Turning to the shortcomings of Chauvel, it does not disclose or suggest the selection of an entry from a set of replaceable entries in a table, where the table includes both replaceable and irreplaceable entries as in claims 1-15 and 37-40. While Chauvel appears to disclose some type of irreplaceable entry (e.g., Chauvel's "locked entries") it does not disclose or suggest replaceable entries. Further, Chauvel explicitly states that a cache system that uses such locked entries is undesirable because it further reduces the efficiency of a cache. Said another way, Chauvel explicitly teaches away from using irreplaceable entries to operate a cache.

The feature of a table that includes both replaceable and irreplaceable entries is clearly set forth in the claims and specification. Thus, the Appellants submit that he Examiner is duty bound to respond to the Appellant's positions regarding Chauvel.

Because the Examiner has not done so, the Appellant presumes that his position is persuasive and, accordingly, respectfully requests that the members of the Board reverse the decision of the Examiner and allow claims 1-15 and 37-40.

(ii) Claims 16-20, 22-31, 33-36, 41 and 42

Regarding claims 16-20, 22-31, 33-36, 41 and 42 the Appellant initially notes that each of these claims also includes the feature of a table that includes both replaceable and irreplaceable entries and that Swildens does not make up for the deficiencies of Peercy or Doyle set forth above. That is,

Swildens does not disclose a table which includes both replaceable and irreplaceable entries as in claims 16-20, 22-31, 33-36, 41 and 42.

(iii) Claims 38, 40 and 42

With respect to claims 38, 40 and 42 the Appellant initially notes that these claims depend on claims 1, 6 or 16 and are allowable over Peercy combined with Doyle and Swildens for the reasons set forth above.

In addition, each of these claims includes the feature of an audio file, cached resource. In the Final Office Action the Examiner takes the position that an excerpt from Peercy (column 2, lines 19-31) discloses a "multimedia file' which, in turn, is a disclosure of the claimed audio file. However, this excerpt from Peercy is totally silent with respect to either a multimedia or audio file. Instead, this excerpt discusses "bookmarking' of URLs of web sites. There is no mention or suggestion of a cached audio file.

Conclusion:

For the reasons stated above, the Appellants respectfully request that the members of the Board reverse the Examiner's rejections and allow claims 1-20, 22-31 and 33-42.

Respectfully submitted,

Capitol Patent & Trademark Law Firm, PLLC

By: _____

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VIII. CLAIMS APPENDIX

1. A caching method comprising the steps of:

(a) receiving an Internet site name;

(b) storing the Internet site name in an entry of a table having n entries if the Internet site name is not in the table;

(c) counting the number of times the Internet site name has been received, and if the Internet site name is new and the table is full, selecting an entry from a set of replaceable entries in the table, where the table includes both replaceable and irreplaceable entries;

(d) replacing the selected entry with the new entry; and

(e) caching a resource corresponding to at least one of a most frequently used Internet sites r where $r \leq n$.

2. The method of claim 1 wherein the Internet site name is a URL (Uniform Resource Locator).

3. The method of claim 1 wherein each entry of the table has a name field for storing the Internet site name and a count field for storing the number of times the Internet site name has been received.

4. The method of claim 3 further comprising the step of retrieving r most frequently used Internet site names according to the value of the count field of each entry.

5. The method of claim 1 wherein if the table is full and the Internet site name is not in the table, replace one of the q least frequently used entries according to the value of the count field of each entry.

6. An apparatus for caching resources of r most frequently used Internet site names comprising:

(a) a memory for storing a table having n entries where $n \geq r$, where r is the number of most frequently used Internet sites and each entry comprises a name field; and

(b) a processor for,

receiving an Internet site name,

storing the Internet site name into the name field of an entry in the table,

selecting an entry from a set of replaceable entries in the table if the table is full and the Internet site name is not in the table, where the table includes both replaceable and irreplaceable entries; and

replacing the selected entry with the Internet site name entry.

7. The apparatus of claim 6 wherein the Internet site name is a URL (Uniform Resource Locator).

8. The apparatus of claim 6 wherein if the table is full and the Internet site name is not in the table, the processor randomly selects one of q at least frequently used entries for replacement from_the set of replaceable entries.

9. The apparatus of claim 6 wherein if the table is full and the Internet site name is not in the table, the processor replaces the least frequently used entry among q least frequently used entries from the set of replaceable entries.

10. The apparatus of claim 6 wherein each entry in the table further comprises a count field for storing the number of times the associated Internet site name in the entry has been received.

11. The apparatus of claim 10 wherein if the Internet site name is in one of the entries, the processor increments the value of the count field.

12. The apparatus of claim 11 wherein the processor sorts the entries in the table into an order according to the value of the count field of each entry.

13. The apparatus of claim 12 wherein the order is descending, whereby the r most frequently used Internet site names are in the first r entries.

14. The apparatus of claim 12 wherein the sorting method is a bubble sort method.

15. The apparatus of claim 10 wherein the processor retrieves the r most frequently used Internet site names from the top r entries according to the value of the count field of each entry.

16. An apparatus for caching resources of r most frequently used Internet site names, the apparatus comprising:

(a) a receiver for receiving an Internet site name;

(b) a processor for converting the Internet site name into a hash number and storing the number into an entry in a table; and

(c) a memory for storing the table having n entries where $n \geq r$, where r is the number of most frequently used Internet site names, each entry in the table comprising a number field for the number, a name field for the Internet site name and a count field for counting the number of times the Internet site name is received, wherein

(d) the processor further selects an entry from a set of replaceable entries in the table if the table is full and the number is not in the table and replaces the selected entry with the hash number entry according to the value of the count field of each entry the table including both replaceable and irreplaceable entries.

17. The apparatus of claim 16 wherein the Internet site name is a URL (Uniform Resource Locator).

18. The apparatus of claim 16 wherein if the number is in one of the entries, the processor increments the value of the count field.

19. The apparatus of claim 16 wherein the processor retrieves the r most frequently used Internet site names from the top r entries according to the value of the count field of each entry.

20. The apparatus of claim 16 wherein the processor sorts the entries in the table into an order according to the value of the count field of each entry.

21. (Cancelled)

22. The apparatus of claim 16 wherein if the number is not in the table and the table is not full, the processor stores the number and the Internet site name in the respective fields of an empty entry.

23. The apparatus of claim 16 wherein if the number is in an entry and the value of the count field of that entry is greater than a threshold, the processor stores the Internet site name in that entry.

24. The apparatus of claim 16 wherein if the table is full and the number is not in the table, the processor randomly selects one of the q least frequently used entries for replacement from the set of replaceable entries.

25. The apparatus of claim 16 wherein if the table is full and the number is not in the table, the processor replaces the entry with the smallest value of the count field among q least frequently used entries from the set of replaceable entries.

26. The apparatus of claim 16 wherein the table comprises q sub-tables where $n>q>1$, each sub-table has n/q entries and pointed to by an address ranging from 0 to q-1, the number is searched or stored in the sub-table pointed to by the address produced by taking a modulo operation on the number by q, if the sub-table is full and the number is not in the sub-table, the

processor replaces one of the bottom m/q entries according to the value of the count field of each entry, and retrieves the r most frequently used Internet site names from the top r entries among the q sub-tables according to the value of the count field of each entry.

27. A computer readable medium having computer program logic recorded thereon for building a table to select r most frequently used Internet site names, the computer program logic comprising:

(a) a computer program code segment for receiving an Internet site name;

(b) a computer program code segment for converting the received Internet site name into a hash number;

(c) a computer program code segment for storing the number in the table having n entries where $n \geq r$, each entry in the table comprising a number field for the number, a name field for the received Internet site name and a count field for counting the number of times the Internet site name has been received, wherein

(d) the computer code segment for storing further selects an entry from a set of replaceable entries in the table if the table is full and the number is not in the table and replaces the selected entry with the new entry according to the value of the count field of each entry the table including both replaceable and irreplaceable entries.

28. The computer readable medium of claim 27 wherein the received Internet site name is a URL (Uniform Resource Locator).

29. The computer readable medium of claim 27 wherein if the number is in one of the entries, the storing computer program code segment increments the value of the count field.

30. The computer readable medium of claim 27 wherein the logic further comprises a computer program code segment for retrieving the r most frequently used Internet site names from the top r entries according to the value of the count field of each entry.

31. The computer readable medium of claim 27 wherein the logic further comprises a computer program code segment for sorting the entries in the table into an order according to the value of the count field of each entry.

32. (Cancelled)

33. The computer readable medium of claim 27 wherein if the number is in the table and the table is not full, the storing computer program code segment stores the number and the received Internet site name in the respective fields of an empty entry.

34. The computer readable medium of claim 27 wherein if the number is in an entry and the value of the count field in that entry is greater than a threshold, the storing computer program code segment stores the received Internet site name in the name field of that entry.

35. The computer readable medium of claim 27 wherein if the table is full and the number is not in the table, the storing computer program code segment randomly selects one of q least frequently used entries for replacement from the set of replaceable entries.

36. The computer readable medium of claim 27 wherein if the table is full and the number is not in the table, the storing computer program code segment replaces the entry with the smallest received count among q least frequently used entries.

37. The method of claim 1 wherein the cached resource is a Hypertext Markup Language (HTML) file.

38. The method of claim 1 wherein the cached resource is an audio file.

39. The apparatus of claim 6 wherein the resources include an HTML file.

40. The apparatus of claim 6 wherein the resources include an audio file.

41. The apparatus of claim 16 wherein the resources include an HTML file.

42. The apparatus of claim 16 wherein the resources include an audio file.

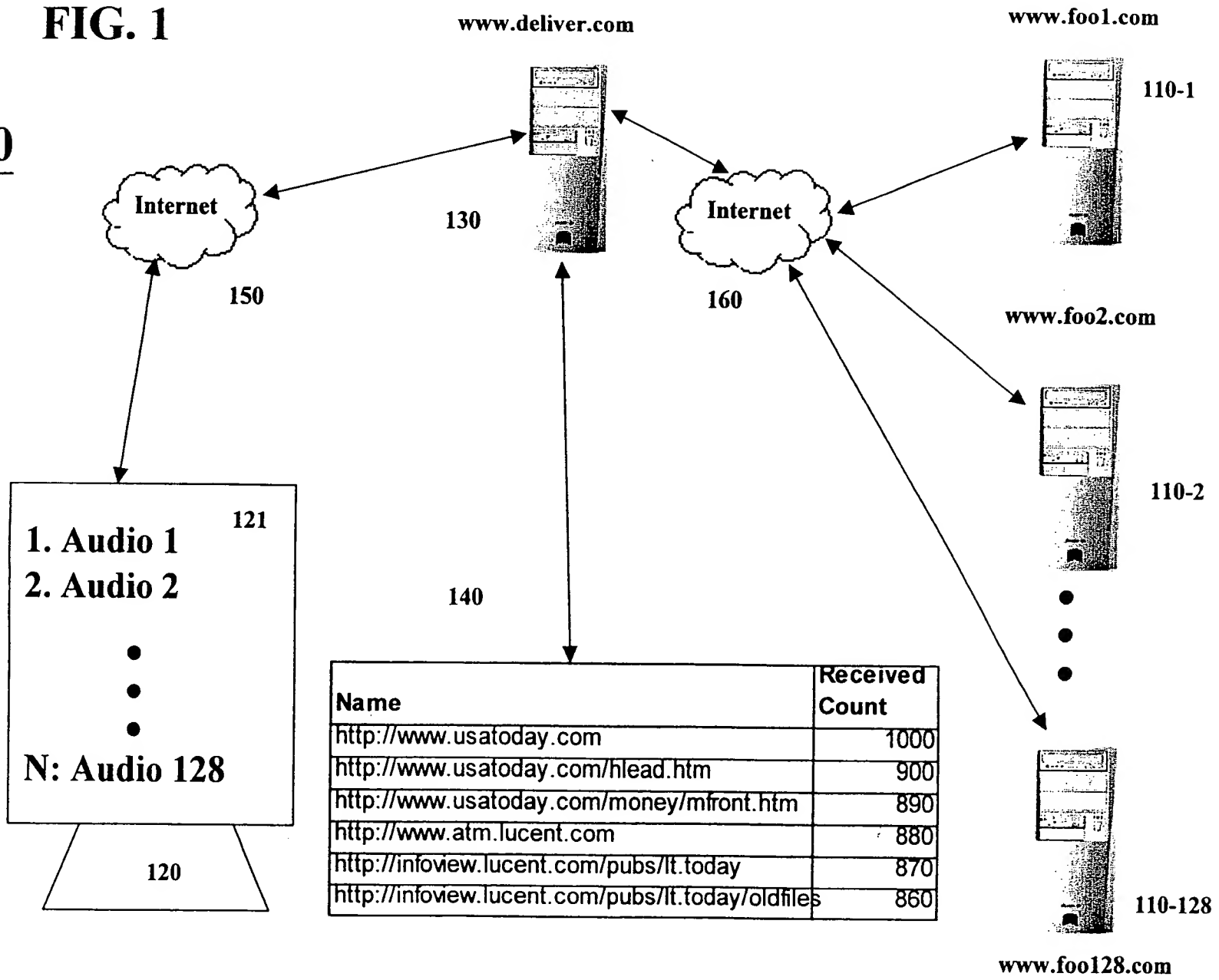
IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.

FIG. 1



Name	Received Count
http://www.usatoday.com	1000
http://www.usatoday.com/hlead.htm	900
http://www.usatoday.com/money/mfront.htm	890
http://www.atm.lucent.com	880
http://infoview.lucent.com/pubs/lt.today	870
http://infoview.lucent.com/pubs/lt.today/oldfiles	860

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FIG. 2

		Name	Received Count
irreplaceable	n1	http://www.usatoday.com	1000
	n2	http://www.usatoday.com/hlead.htm	900
	n3	http://www.usatoday.com/money/mfront.htm	890
	n4	http://www.atm.lucent.com	880
	n5	http://infoview.lucent.com/pubs/lt.today	870
replaceable	n6	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.085.html	860
	n7	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.082.html	850
	n8	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.081.html	800
	n9	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.079.html	780
	n10	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.078.html	760
	n11	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.077.html	740
	n12	http://www.astro.umd.edu/~fleming/latest_news.html	720
	n13	http://www.astro.umd.edu/~fleming	710
	n14	http://www.astro.umd.edu/~hcohen/FAQ.html	700
	n15	http://cdd.dnrc.bell-labs.com	600
	n16	http://cdd.dnrc.bell-labs.com/town.html	500
	n17	http://cdd.dnrc.bell-labs.com/resources.html	400
	n18	http://cdd.dnrc.bell-labs.com/technology.html	300
	n19		
	n20		

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		Base 16 hashed number	name	Received Count
irreplaceable	h1	483a24a9	http://www.usatoday.com	1000
	h2	27a0b8c	http://www.usatoday.com/hlead.htm	900
	h3	a3338111	http://www.usatoday.com/money/mfront.htm	890
	h4	94c1af05	http://www.atm.lucent.com	880
	h5	37a7dc4c	http://infoview.lucent.com/pubs/lt.today	870
replaceable	h6	6215a6d1	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.085.htm	860
	h7 h8	75fda6d1	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.082.htm	850
	h9	7df5a6d1	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.081.htm	800
	h10	4221b2d1	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.079.htm	780
	h11	45d9b2d1	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.078.htm	760
	h12	6df1b2d1	http://infoview.lucent.com/pubs/lt.today/oldfiles/year.2001/LT.2001.077.htm	740
	h13	9fc0643b	http://www.astro.umd.edu/~fleming/latest_news.html	720
	h14	455cac4a	http://www.astro.umd.edu/~fleming	710
	h15	32073b0e	http://www.astro.umd.edu/~hcohen/FAQ.html	700
	h16	dfbf950a	http://cdd.dnrc.bell-labs.com	600
	h17	267ce247	http://cdd.dnrc.bell-labs.com/town.html	500
	h18	8e15b8dc	http://cdd.dnrc.bell-labs.com/resources.html	400
	h19	fa2465bb	http://cdd.dnrc.bell-labs.com/technology.html	300
	h20	e7206159	http://cdd.dnrc.bell-labs.com/documents.html	200

FIG. 3

FIG. 4

```
401 unsigned long name_hash(const char *p)
    {
402 unsigned long h = 0;
403 unsigned int m;

404 while( *p ) {
405 m = *p++;
406 m = m ^ m << 1;
407 m = m ^ m << 2;
408 m = m ^ m << 4;
409 h = m ^ ( ( h >> 9 ) | ( h << 23 ) );
      }

410 return h;
   }
```

FIG. 5

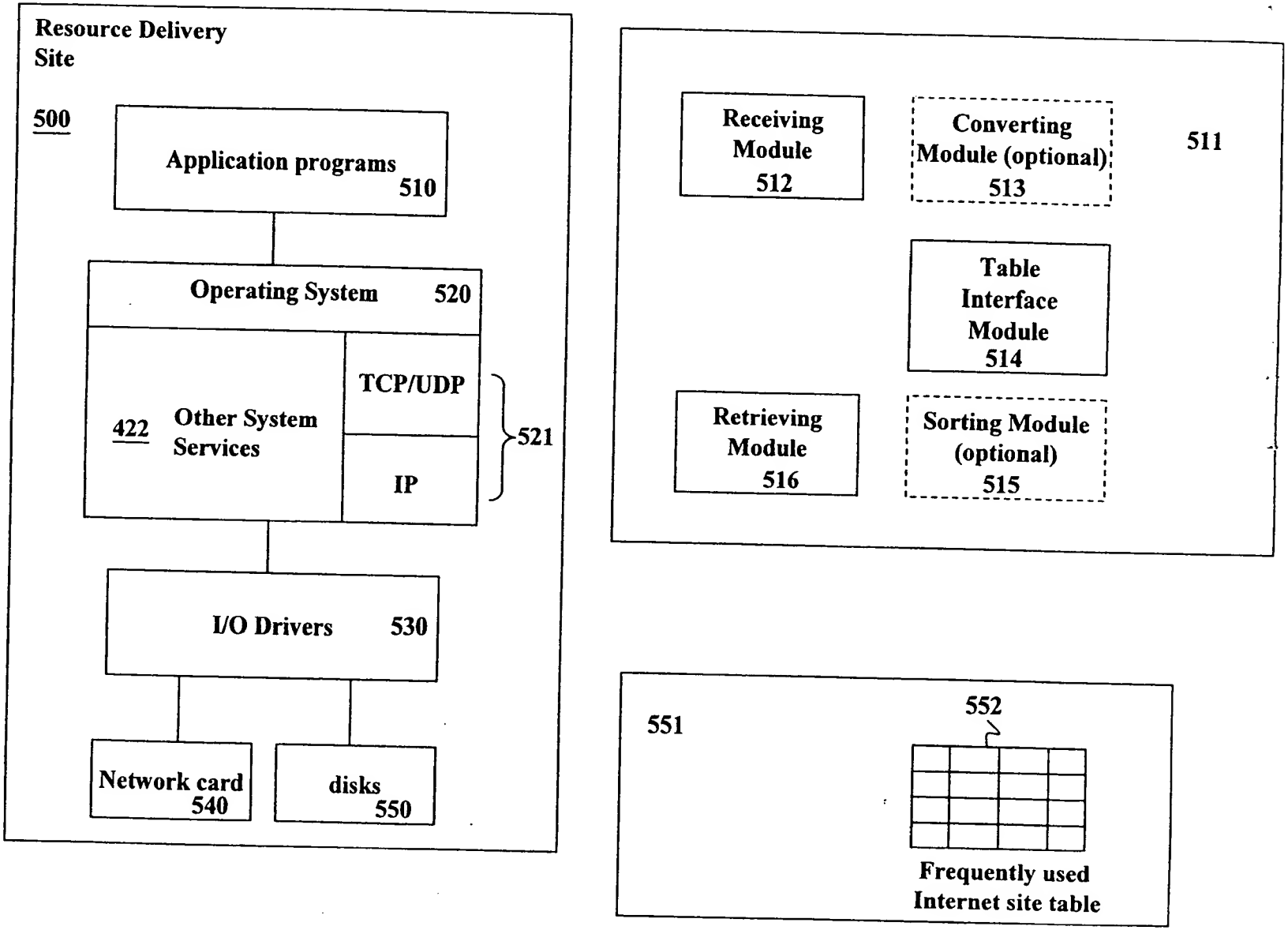
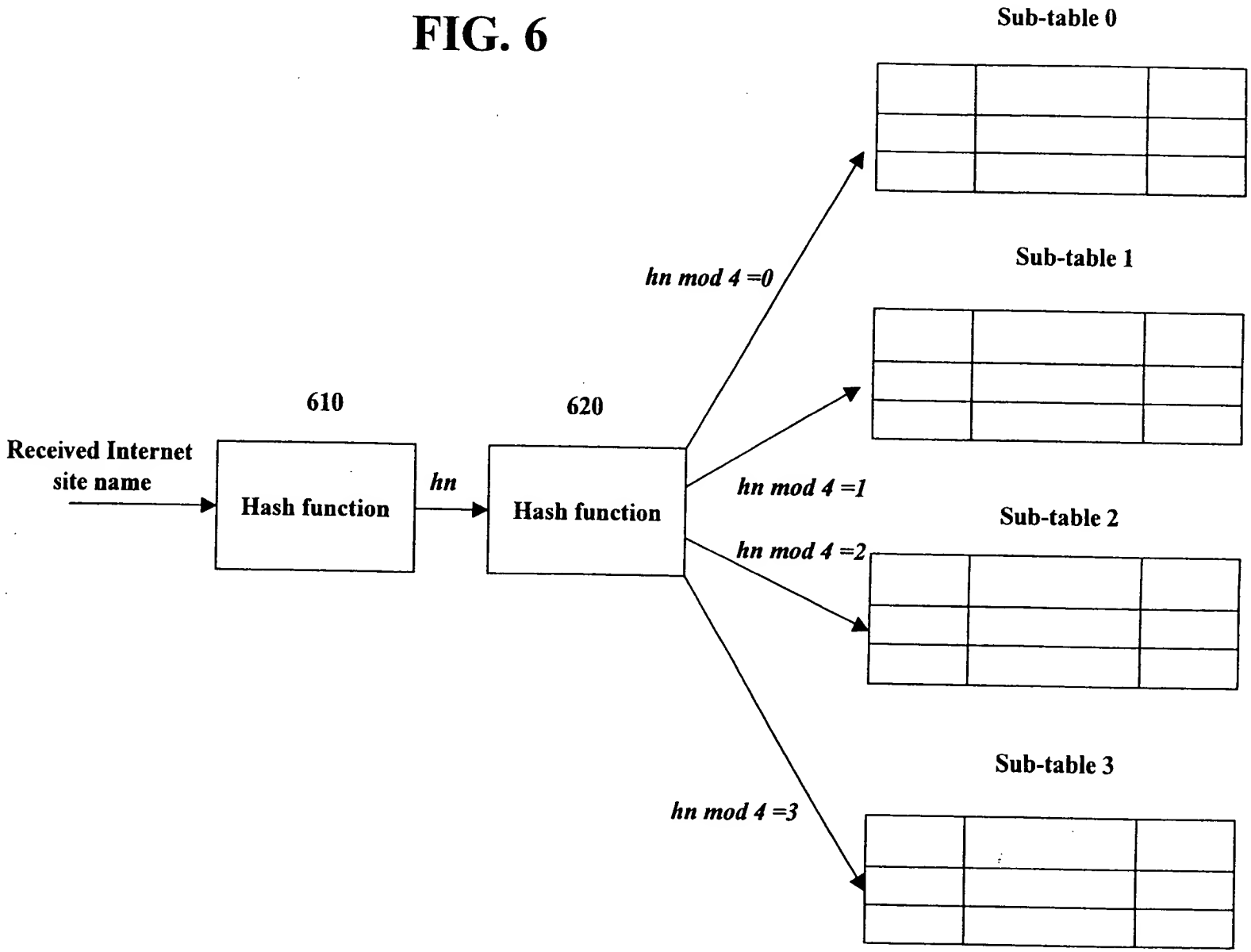

Resource Delivery Site
500
Application programs 510
Operating System 520
422 Other System Services
TCP/UDP
IP
521
I/O Drivers 530
Network card 540
disks 550
Receiving Module 512
Converting Module (optional) 513
511
Table Interface Module 514
Retrieving Module 516
Sorting Module (optional) 515
551
552
Frequently used Internet site table

FIG. 6


Sub-table 0
Sub-table 1
Sub-table 2
Sub-table 3
610
620
Received Internet site name
Hash function
hn
Hash function
hn mod 4 =0
hn mod 4 =1
hn mod 4 =2
hn mod 4 =3

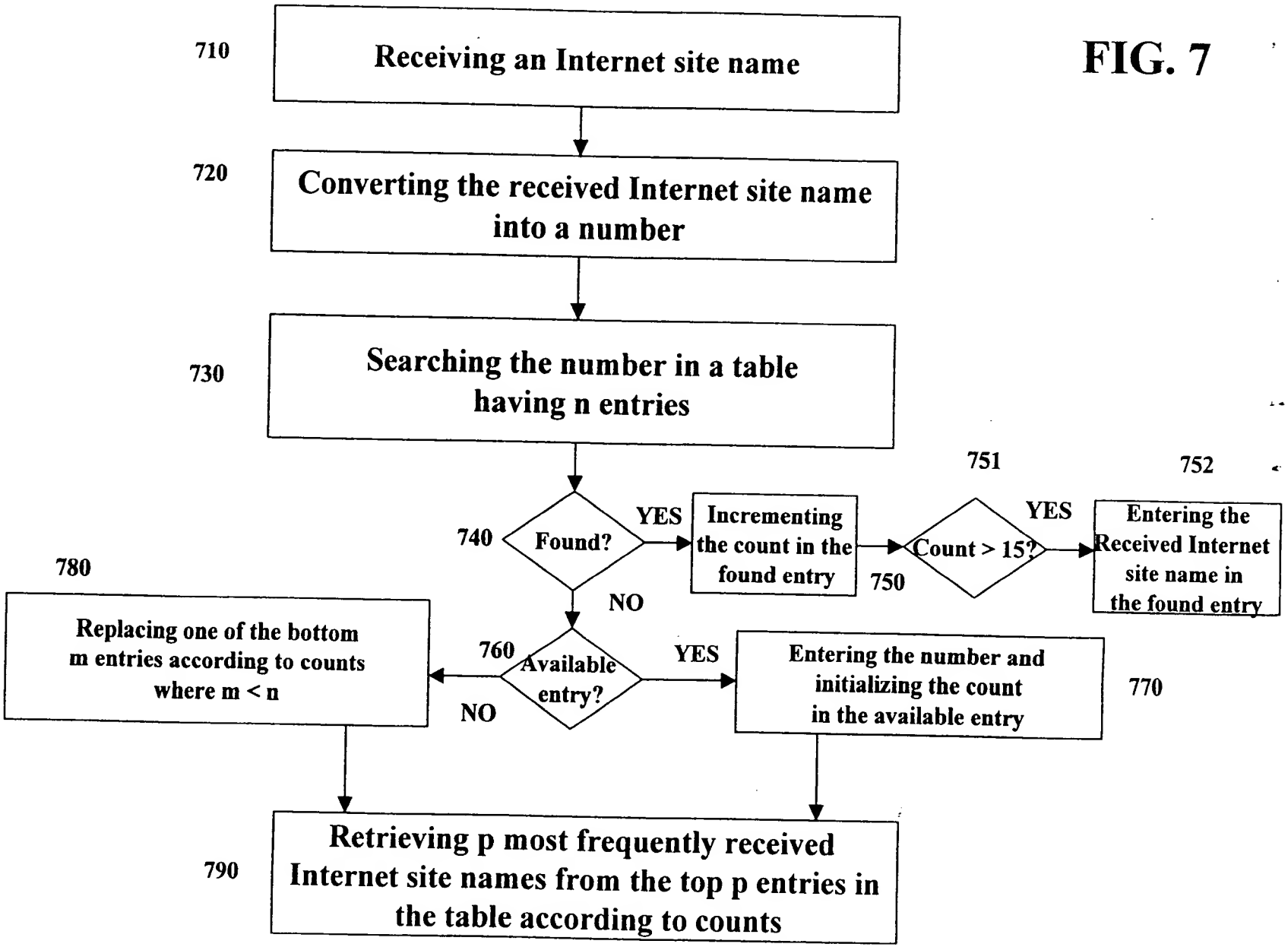

710
Receiving an Internet site name
720
Converting the received Internet site name into a number
730
Searching the number in a table having n entries
740
Found?
YES
Incrementing the count in the found entry
751
Count > 15?
YES
752
Entering the Received Internet site name in the found entry
750
NO
780
Replacing one of the bottom m entries according to counts where m < n
760
Available entry?
YES
Entering the number and initializing the count in the available entry
770
NO
790
Retrieving p most frequently received Internet site names from the top p entries in the table according to counts

FIG. 7